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HARRITY SNYDER, LLP 11350 Random Hills Road SUITE 600 FAIRFAX, VA 22030			HO, CHUONG T	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/354,640  
Filing Date: July 15, 1999  
Appellant(s): GAN ET AL.

Der-Hwa GAN et al.  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 07/30/07 appealing from the Non  
Final Office action mailed 02/28/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

This appeal involves claims 1-3,4, 6, 8-12, 14, 18, 21, 21.

Claims 13, 15-16, 17, 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

The appellant's statement of the issues in the brief is substantially correct.

The changed are as follows:

Claims are rejected: 1-3,4, 6, 8-12, 14, 18, 21, 21.

Claims are objected: 13, 15-16, 17, 19-20

**(7) Grouping of Claims**

Claims are rejected: 1-3,4, 6, 8-12, 14, 18, 21, 21.

Claims are objected: 13, 15-16, 17, 19-20.

The examiner agrees with appellants "Hahne et al. claims priority to Provisional Patent Application No. 60/123,434 and submit that Provisional Patent Application No. 60/123,434 does not provide support for the information disclosed in col. 11, lines 58-65, of Hahne et al". Therefore, claims 13,17, 19, 20 are object to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all or the limitations of the base claim and any intervening claims.

The examiner agrees with appellants "Vikberg et al. is a continuation-in-part of U.S. Patent Application No. 09/353,135 filed on July 14, 1999, which has issued as U.S. Patent No. 6,775,266. The disclosure of U.S. Patent No. 6,775,266 does not provide to support for Fig. 15 and its corresponding description of Vikberg et al. Thus, Fig.15 of Vikberg et al. cannot be used in rejection of Appellants' claim 15 since the filing date of Vikberg et al. is after Appellants' effective filing date". Therefore, claims 15-15 are object to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all or the limitations of the base claim and any intervening claims.

#### **(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(9) Prior Art of Record**

6,813,242	Haskin et al.	November 02, 2004
6,560,218	McAllister et al.	May 06, 2003
6,466,985	Goyal et al.	October 15, 2002

H2075 H	Gnauck et al.	August 05, 2003
6,167,025	Hsing et al.	December 26, 2000
7,002,917	Saleh	February 21, 2006
6,538,416	Hahne et al.	March 25, 2003
20030053463	Vikberg	March 20, 2003
6,430,150	Azuma	August 06, 2002

#### **(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haskin et al. (U.S. Patent No. 6,813,242) in view of McAllister et al. (U.S. Patent No. 6,560,218 B2).

In the claim 1, see figures 2, 3, Haskin et al. discloses a network system including of network element including a plurality of nodes (switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (switch 3 or 5),

wherein the at least one-non-alternative-route-enabled node (switch 3 or 5) comprises:  
a mechanism to detect failure in a downstream network element in the initial route; and  
a forwarding to automatically forward a failure message upstream along the initial route  
to an alternative-route-enabled node (switch 1), the failure message causing the  
alternative-route-enabled node (switch 1) to begin forwarding packets on an alternative  
route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. is silent to disclosing a storage space to store an initial  
route from the source device to the destination.

McAllister et al. (6,560,218) disclose a storage space to store an initial route from  
the source device (see figure 1, User 1) to the destination (see figure 1, User 2) (see  
col. 2, lines 30-34, each network node having a local static routing table providing next  
hop routing information to adjacent nodes, characterized in that said routing tables  
define a primary route and an alternative route to adjacent nodes) (see col. 2, lines 38-  
45, if the primary route is not usable due to congestion or physical failure, the node then  
attempts to forward the setup message on the alternative route; and if the alternative  
route is the same route on which the setup message is received, the node crankback  
the call back to a preceding node which either forwards the setup message over the  
alternative route defined in the node's routing table or again cranks the call back to a  
further preceding node);

Both McAllister and Haskin discloses a system of fast alternative-path automatic  
rerouting of labeled data packets normally routed over a predetermined primary label  
switched path upon failure. McAllister recognizes a storage space to store an initial

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route from the source device to the destination. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of McAllister to provide a storage space to store an initial route from the source device to the destination in order to reduce the probability of packet loss in a network.

3. In the claim 24, see figures 2, 3, Haskin et al. discloses a network for forwarding packets from a source device (source 1) to a destination device (destination 7) and including of network element including a plurality of nodes (switches 2, 3, 4, 5, 6), the plurality of intermediate network nodes (switches 2, 3, 4, 5, 6) comprising: at least one first node (node 1) configured to: detect a failure in a downstream node in the initial route, and automatically forward a packet to a node on one of the at least one alternative route in response to detect the failure (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45);

At least one second node (switch 5) configured to detect a failure in a downstream network node in the initial route, and forward a failure message to an upstream first node (switch 1) in response to detecting the failure, the failure message causing the upstream first node to automatically forward a packet to a node of the at least one alternative route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. are silent to disclosing at least one first node configured to: store an initial route from the source device to the destination device and at least one alternative route from the source device to the destination device; and at least one second node configured to: store the initial route .

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McAllister et al. disclose at least one first node (node A) configured to: (route table 11) store an initial route from the source device to the destination device and at least one alternative route from the source device to the destination device; and at least one second node (node B) configured to: store the initial route (route table 11) (see col. 3, lines 1-2)

Both McAllister and Haskin discloses a system of fast alternative-path automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure. McAllister recognizes a storage space to store an initial route from the source device to the destination. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of McAllister to include at least one first node configured to: store an initial route from the source device to the destination device and at least one alternative route from the source device to the destination device; and at least one second node configured to: store the initial route in order to reduce the probability of packet loss in a network.

4. In the claim 4, Haskin et al. disclose the alternative route does not include the downstream network element in the initial route (col. 2, lines 35-40, setting up an alternative label switched path segment between said source ingress and destination egress end switches of the primary path, separate from the primary path and sharing no link or switching entity of the primary path apart from the ingress and egress end switches.

***Claim Rejections - 35 USC § 103***



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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Haskin – McAllister) in view of Goyal et al. (U.S. Patent No. 6,466,985 B1).

In the claim 2, the combined system (Haskin – McAllister) discloses the limitations of claim 1 above.

However, the combined system (Haskin – McAllister) is silent to disclosing a connection oriented network with a plurality of established initial routes.

Goyal et al. discloses a connection oriented network with a plurality of established initial routes (see figure 1, In view of the foregoing, it can be appreciated that a substantial need exists for introducing the QoS advantages of connection-oriented networks into connectionless networks (e.g., using IP) without losing the advantages given by connectionless networks).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – McAllister) with the teaching of Goyal to provide a connection oriented network with a plurality of established initial routes in order to provide quality of service advantages of connection-oriented networks.

7. In the claim 3, the combined system (Haskin – McAllister) discloses the limitations of claim 1 above.

However, the combined system (Haskin – McAllister) is silent to disclosing the plurality of nodes includes a label switched router.

Goyal et al. discloses the plurality of nodes includes a label switched router (There are four aspects of constructing a flow: (1) declaring a name; (2) pinning the route, (3) enabling reverse path routing, and (4) assigning attributes (such as QoS). Abstractly, current network nodes maintain two tables, a routing table and a forwarding table. In the case of a traditional router the forwarding table corresponds to the routing cache. On an ATM switch or an MPLS Label Switch Router (LSR), the forwarding table is respectively the Virtual Channel (VC) lookup table or the label lookup table. To support the flows used in the embodiments of the invention, a traditional router would be augmented with an additional forwarding table for mapping flow names to flow state (including the output port), as discussed in more detail with reference to FIG. 2).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – McAllister) with the teaching of Goyal to provide the plurality of nodes includes a label switched router in order to provide quality of service advantages of connection-oriented networks.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

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subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Haskin – McAllister) in view of Gnauck et al. (H2075 H).

In the claim 6, the combined system (Haskin – McAllister) disclose the limitations of claim 1 above.

However, the combined system (Haskin – McAllister) are silent to disclosing the mechanism to detect failure sends communication packets to downstream nodes at regular intervals.

Gnauck et al. (H2075 H) discloses the mechanism to detect failure sends communication packets to downstream nodes at regular intervals (see col. 14, lines 62-65, Electronics 1370 are adapted to detect a failure in the connection between ONU 1300 and the COT that includes the optical fiber selected by optical switch 1317. For example, the COT could send a predetermined signal to ONU 1300 at regular intervals.)

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – McAllister) with Gnauck to provide the mechanism to detect failure sends communication packets to downstream nodes at regular intervals in order to find an alternative route with sufficient quality of service characteristic in the event of a network failure.

***Claim Rejections - 35 USC § 103***

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10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haskin et al. (U.S. Patent No. 6,813,242 B1) in view of Hsing et al. (6,167,025).

In the claim 8, Haskin et al. discloses a system for forwarding packets from a source device to a destination device in network interconnected elements include nodes (2,3,4,5,6) and links, comprising: determining an initial route, the initial route including at least one alternative route enable node (5) and at least one alternative route enable node; detecting a failed element; and automatically forward packets on the alternative route without communicating with either the source or the destination (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. is silent to disclosing the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route.

Hsing et al. discloses the at least one non alternative route enabled node (figures 12, 3A, 3B, 3C, figure 16) storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route (col.14, lines 33-43, The action taken by the switch 200 detecting a fault is a function of whether the switch is located upstream to a fault in which case the switch is an upstream neighboring switch or downstream in which case the switch is a downstream neighboring switch. Upstream neighboring switches are generally responsible for initiating the process of establishing an alternative path to the destination device while downstream neighboring switches are generally responsible for initiating the release of network capacity reserved by switches which are no longer used as part of the path to communicate information between the source and destination devices.).

Both Haskin and Hsing discloses a system of fast alternative-path automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure. Hsing recognizes the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route

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enable node and the identified downstream interconnected elements; forwarding packets on the initial route. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of Hsing to provide the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route in order to reduce the probability of packet loss in a network.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Haskin – Hsing) in view of Saleh (7,002,917).

In the claim 9, the combined system (Haskin – McAllister) discloses the limitations of claim 8 above.

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However, the combined system (Haskin – Hsing) is silent to disclosing determining the initial route further comprises: determining a short path from the destination device to the source device within the network; refining the path according to the administrative constraints; and establishing the path as the initial route.

Saleh discloses determining the initial route further comprises: determining a short path (col. 27, lines 1-30, shortest path first) from the destination device to the source device within the network; refining the path according to the administrative constraints (abstract, mini hops, mini costs “bandwidth”); and establishing the path as the initial route (col. 27, lines 1-30).

Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – Hsing) with the teaching of Saleh to determine the initial route further comprises: determining a short path from the destination device to the source device within the network; refining the path according to the administrative constraints; and establishing the path as the initial route in order to find an alternative route with sufficient quality of service characteristic in the event of a network failure.

14. In the claim 10, Saleh discloses wherein refining the path comprising rejecting the path exceeding bandwidth allocation and hop limit (see abstract, mini hops, mini cost “bandwidth”) (col. 27, lines 1-30).

15. In the claim 11, Haskin disclose refining the alternate route to exclude the failed element on the initial router (see col. 2, lines 38-40).

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However, Haskin is silent to disclosing determining a shortest path from a node preceding the failed element to the destination device within the network.

Saleh discloses determining the alternative route (col. 2, lines 65-67) further comprises determining a shortest path (col. 27, lines 1-30) from a node preceding the failed element to the destination device within the network; establishing the alternative route for forwarding packets (col. 27, lines 1-30).

Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – McAllister) with the teaching of Saleh to determine a shortest path from a node preceding the failed element to the destination device within the network in order to find an alternative route with sufficient quality of service characteristic in the event of a network failure.

16. In the claim 12, Haskin discloses detecting a failure is conducted locally by a node (switch 5) preceding the failed element (switch 7) without requiring notification of a master server or an ingress node (see col. 3, lines 15-20).

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



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18. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haskin et al. (U.S. Patent No. 6,813,242 B1) in view of Saleh (U.S. Patent No. 7,002,917 B1).

In the claim 14, Haskin discloses a system for forwarding packets from a source device to a destination device in a network of interconnected element (switches 2,3,4,5) including nodes and links, comprising:

Establishing the path as the initial route, determining an alternative route; forwarding packets on the initial route; detecting a failed element; and automatically forwarding packets on the alternative route without communicating with either the source or the destination route (see col. 2, lines 35-45, col. 3, lines 15-22).

However, Haskin is silent to disclosing determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic.

Saleh discloses determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints (mini hop, mini costs) and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic (see col. 2, lines 65-67, a method for finding an alternate route with sufficient quality of service characteristics in the event of a network failure that is fast and efficient must be provided to enable such quick restoration) (see col. 27, lines 1-30,

table 9A, table 9B, Paths are computed using what is referred to herein as a QoS based shorted path first (QSPF) technique).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of Saleh to provide determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic in order to select routing paths through networks.

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over McAllister (6,560,218) in view of Saleh (7002917).

21. In the claim 18, McAllister discloses a system for locally rerouting packets traveling on an established route when a node (see figure 1, node B) ( figure 2, node C) in a network of interconnected nodes (figure 1, nodes A, B, C) (figure 2, nodes A, B, C, D) fails, the system comprising:

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- Storing, at each of the select intermediary nodes (figure 1, nodes B, A), the alternative route (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12);
- Determining locally that the established route has failed (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12); and automatically forwarding packets on the alternative route (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12).

However, McAllister is silent to disclosing computing, at select intermediary nodes along the established route, an alternative route leading from the select intermediary nodes to the destination device of the established route.

Saleh discloses computing, at select intermediary nodes along the established route, an alternative route leading from the select intermediary nodes to the destination device of the established route (see col. 2, lines 65-67, a method for finding an alternate route with sufficient quality of service characteristics in the event of a network failure that is fast and efficient must be provided to enable such quick restoration) (see col. 27, lines 1-30, table 9A, table 9B, Paths are computed using what is referred to herein as a QoS based shorted path first (QSPF) technique).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of McAllister with the teaching of Saleh to compute, at select intermediary nodes along the established route, an alternative route leading from the select intermediary nodes to the destination device of the established route in order to select routing paths through networks.

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***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (McAllister – Saleh) in view of Hsing et al. (6,167,025).

In the claim 21, the combined system (McAllister – Saleh) disclose the limitations of claim 18 above.

However, the combined system (McAllister – Saleh) is silent to disclosing wherein determining locally that the established route has failed is conducted by a signal protocol

Hsing et al. discloses wherein determining locally that the established route has failed is conducted by a signal protocol (alarm indication signal) (col. 5, lines 38-43, signaling protocol).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (McAllister – Saleh) with the teaching of Hsing to determine locally that the established route has failed is conducted by a signal protocol in order to detect node and/or link failure.

***Allowable Subject Matter***

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24. Claims 13, 15-16, 17, 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **(11) Response to Argument**

In the appellant appeal brief (the page 9, lines 7-9), the appellant argues the examiner failed to explain how and why one having ordinary skill in the art would have been realistically motivated to modify applied reference (Haskin et al. "6,813,242" in view of McAllister et al. "6,560,218") and / or combine applied references (Haskin et al. "6,813,242" in view of McAllister et al. "6,560,218") to arrive at the claimed invention.

In response to appellant's argument above, both Haskin et al. and McAllister disclose rerouting of data packets over predetermined primary path upon failed or congestion in the primary path.

Haskin et al. teaches a new technique for fast automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure or congestion in the primary path (see abstract); comprising: a network system including of network element including a plurality of nodes (switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (switch 3 or 5), wherein the at least one-non-alternative-route-enabled node (switch 3 or 5) comprises: a mechanism to detect failure in a downstream network element in the initial route; and a forwarding to automatically forward a failure message upstream along the initial route to an

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alternative-route-enabled node (switch 1), the failure message causing the alternative-route-enabled node (switch 1) to begin forwarding packets on an alternative route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. does not explicitly teach a storage space to store an initial route from the source device to the destination.

McAllister et al., in related art, discloses a storage space to store an initial route from the source device (see figure 1, User 1) to the destination (see figure 1, User 2) (see col. 2, lines 30-34, each network node having a local static routing table providing next hop routing information to adjacent nodes, characterized in that said routing tables define a primary route and an alternative route to adjacent nodes) (see col. 2, lines 38-45, if the primary route is not usable due to congestion or physical failure, the node then attempts to forward the setup message on the alternative route; and if the alternative route is the same route on which the setup message is received, the node crankback the call back to a preceding node which either forwards the setup message over the alternative route defined in the node's routing table or again cranks the call back to a further preceding node).

Both McAllister and Haskin disclose a system of fast alternative-path automatic rerouting of data packets normally routed over a predetermined primary label switched path upon failure in the primary path. McAllister recognizes a storage space to store an initial route from the source device to the destination. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of McAllister to provide a storage space to store an initial

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route, alternative routes from the source device to the destination in order to reroute the packet over the primary path without crankback the message to source device.

Therefore, the new system would be enable to reduce the probability of packet loss in a network and to make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

For the above reasons, it is believed that the rejection of claims 1, 4, 24 under 35 U.S.C 103 based on Haskin et al. (6813242) in view of McAllister et al. (6560218) should be sustained.

**Claim 1 and 4:**

The appellant argues (in the page 10, lines 1-5) that “Haskin et al. and McAllister et al do not disclose or suggest a plurality nodes including at least one alternative-route-enabled node and at least one non-alternative-route-enable node”.

However, the examiner respectfully disagrees with the assertion.

The examiner respectfully submits that (as submitted in the Non-Final rejection dated 02/28/07), Haskin et al. discloses a network system including of network element including a plurality of nodes (switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (switch 3 or 5), wherein the at least one-non-alternative-

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route-enabled node (switch 3 or 5) comprises: a mechanism to detect failure in a downstream network element in the initial route; and a forwarding to automatically forward a failure message upstream along the initial route to an alternative-route-enabled node (switch 1), the failure message causing the alternative-route-enabled node (switch 1) to begin forwarding packets on an alternative route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

McAllister, in the same field endeavour indeed discloses a network system including of network element including a plurality of nodes (nodes A, B, C, D) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (node B) and at least one non-alternative-route-enabled node (node C), wherein the at least one-non-alternative-route-enabled node (node C) comprises: a storage space (routing table) to store an initial route (primary route) from the source device (figure 1, figure 2, User 1) to the destination device (figure 1, figure 2, User 2).

The appellant argues (page 11, lines 11-18) that switches 3 and 5 are non-alternative nodes are not supported by the Haskin et al. disclosure. Contrary to the Examiner's allegations, Haskin et al. does not disclose or suggest a non-alternative-route enable node, which includes a storage space to store an initial route from the source device to the destination device; a mechanism to detect failure in a downstream network element in the initial route; and a forwarder to automatically forward message upstream along the initial route to an alternative-route-enabled node, where the failure message causes the alternative-route-enabled node to begin forwarding packets on an alternative route.



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However, the examiner respectively disagrees with the assertion.

Haskin et al. discloses a network system including of network element including a plurality of nodes (figures 2, 3, switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (figures 2, 3, switch 3 or 5), wherein the at least one non-alternative-route-enabled node (switch 3 or 5) (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45); In other words, Haskin et al. clearly disclose (see figure 3) that if the link fails between the switches 3 and 5, the switch 3 detects a failure, but can not implement the alternative route over the downstream of the primary route. The switch 3 forward the packets on the upstream of the primary route to the preceding switch 1. The switch 1 use the alternative route to continue forwarding packets.

McAllister et al. in related art, discloses a non-alternative-route enable node (figure 1, node B), which includes a storage space (routing table) to store (col. 2, lines 63-67, col. 3, lines 1-2, routing table) an initial route from the source device to the destination device; a mechanism to detect failure in a downstream network element in the initial route (primary route); and a forwarder to automatically forward message upstream along the initial route (figure 1, primary route) to an alternative-route-enabled node (figure 1, node A), where the failure message causes the alternative-route-enabled node (figure 1, node A) to begin forwarding packets on an alternative route (col. 3, lines 17-18). In other words, McAllister et al. clearly state (figure 2) each nodes A, B, C, D having routing table, if the link fails between node C and node D (figure 2), node C detects the fails, node C can not implement alternative route to node D, it forwards the

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packet to node B, node B uses its routing table to find alternative routes and continue to forwarding the packet to node D.

The appellant argues (in the page 11, lines 21, page 12, lines 1-3) that Haskin et al. and McAllister et al. do not disclose or suggest a non-alternative-route-enable node.

Haskin et al, and McAllister. can not disclose or suggest a non-alternative-route-enable node that includes a storage to store an initial route from a source device to a destination device, as also recited in claim 1.

However, the examiner respectively disagrees with appellant's assertion.

Haskin et al. discloses a network system including of network element including a plurality of nodes (figures 2, 3, switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (figures 2, 3, switch 3 or 5), wherein the at least one non-alternative-route-enabled node (switch 3 or 5) (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

McAllister et al. discloses or suggest a non-alternative-route-enable node (figure 1, node B) (figure 2, node C) that includes a storage (col. 2, lines 30-35, routing table, col. 2, lines 63-65) to store an initial route (primary route) from a source device (figure 1, User 1) to a destination device (figure 1, User 2) , as also recited in claim 1 (col. 2, lines 63-67, col. 3, lines 1-3).

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The appellant argues (in the page 12, lines 23-28) that this section of McAllister et al. does not disclose or suggest a non-alternative-route-enable node. Moreover, this section of McAllister does not disclose or suggest storing an initial route from a source device to a destination device.

However, the examiner respectively disagrees with appellant's assertion.

McAllister et al. discloses a non-alternative-route-enable node (figure 1, node B) (figure 2, node C) ; Moreover, McAllister et al. discloses storing an initial route (col. 2, lines 30-35, lines 63-65, primary route) from a source device (figure 1, User 1) to a destination device (figure 2, User 2) (col. 2, lines 30-35, routing table).

In the page 13, lines 22-24, the appellant argues the examiner failed to explain why providing a storage space to store an initial route from a source device to a destination device into the Haskin et al. system would reduce the probability of packet loss.

Appellant submit that the Examiner's purported motivation to combine the cited references (Haskin et al. "6813242" in view of McAllister "6560218") is merely conclusory and based impermissible hindsight.

In the response to the appellant's argument above, both Haskin et al. and McAllister disclose rerouting of data packets over predetermined primary path upon failed or congestion in the primary path.

Haskin et al. teaches a new technique for fast automatic automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure or congestion in the primary path (see abstract); comprising: a network

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system including of network element including a plurality of nodes (switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (switch 3 or 5), wherein the at least one-non-alternative-route-enabled node (switch 3 or 5) comprises: a mechanism to detect failure in a downstream network element in the initial route; and a forwarding to automatically forward a failure message upstream along the initial route to an alternative-route-enabled node (switch 1), the failure message causing the alternative-route-enabled node (switch 1) to begin forwarding packets on an alternative route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. does not explicitly teach a storage space to store an initial route from the source device to the destination.

McAllister et al., in related art, discloses a storage space to store an initial route from the source device (see figure 1, User 1) to the destination (see figure 1, User 2) (see col. 2, lines 30-34, each network node having a local static routing table providing next hop routing information to adjacent nodes, characterized in that said routing tables define a primary route and an alternative route to adjacent nodes) (see col. 2, lines 38-45, if the primary route is not usable due to congestion or physical failure, the node then attempts to forward the setup message on the alternative route; and if the alternative route is the same route on which the setup message is received, the node crankback the call back to a preceding node which either forwards the setup message over the alternative route defined in the node's routing table or again cranks the call back to a further preceding node).

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Both McAllister and Haskin discloses a system of fast alternative-path automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure. McAllister recognizes a storage space to store an initial route from the source device to the destination. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of McAllister to provide a storage space to store an initial route, alternative routes from the source device to the destination in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

For the above reason, it is believed that the rejection to claim 1 should be sustained.

For the same reasons, it is believed that the rejection to dependent claim 4 which depends on claim 1 should be sustained as well.

**Claim 24:**

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The appellant argues (in the page 15, lines 1-3) that Haskin et al, and McAllister et al. do not disclose or suggest at least one first node and at least one second node that store an initial route from a source device to a destination device.

However, the examiner respectively disagrees with the appellant's argument.

Haskin et al. discloses at least one first node (figure 1 switches 1, 2, 4, 6, 7) and at least one second node (figure 1, switches 3, 5) .

McAllister in the same field endeavour indeed discloses a network system including of network element including a plurality of nodes (nodes A, B, C, D) and connecting links, comprises: the plurality of nodes including at least one first node (node B) and at least one second node (node C), wherein the at least one second node (node C) comprises: a storage space (routing table) to store an initial route (primary route) from the source device (figure 1, figure 2, User 1) to the destination device (figure 1, figure 2, User 2).

The appellant argues (in the page 15, lines 13-14, page 15, lines 23, page 16, line 1) that McAllister et al. in no way discloses or suggests that local routing table 11 stores an initial route from a source device to a destination device.

However, the examiner respectively disagrees with appellant's argument..

McAllister et al. discloses or suggests that local routing table 11 (col. 2, lines 30-35, lines 63-67, routing table) stores an initial route (primary route) from a source device (figure 1, User 1) to a destination device (figure 1, User 2).

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The appellant argues (in the page 16, lines 6-7, lines 22-23) that the Examiner's purported motivation to combine cited references is merely conclusory and based on impermissible hindsight. As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In the applicant appeal brief (the page 16, line 24, page 17, line 1-2), the appellant argues the examiner failed to explain why incorporating at least one first node and at least one second node that store an initial route from a source device to a destination device into the Haskin et al. system ("6813242") would reduce the probability of packet loss. Appellants submit that the Examiner's motivation is impermissibly based on hindsight.

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In response to appellant's argument above, both Haskin et al. and McAllister discloses rerouting of data packets over predetermined primary path upon failed or congestion in the primary path.

In the claim 24, see figures 2, 3, Haskin et al. discloses a network for forwarding packets from a source device (source 1) to a destination device (destination 7) and including of network element including a plurality of nodes (switches 2, 3, 4, 5, 6), the plurality of intermediate network nodes (switches 2, 3, 4, 5, 6) comprising: at least one first node (node 1) configured to: detect a failure in a downstream node in the initial route, and automatically forward a packet to a node on one of the at least one alternative route in response to detect the failure (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

At least one second node (switch 5) configured to detect a failure in a downstream network node in the initial route, and forward a failure message to an upstream first node (switch 1) in response to detecting the failure, the failure message causing the upstream first node to automatically forward a packet to a node of the at least one alternative route (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. are silent to disclosing at least one first node configured to: store an initial route from the source device to the destination device and at least one alternative route from the source device to the destination device; and at least one second node configured to: store the initial route .

McAllister et al. disclose at least one first node (node A) configured to: (route table 11) store an initial route from the source device to the destination device and at



least one alternative route from the source device to the destination device; and at least one second node (node B) configured to: store the initial route (route table 11) (see col. 3, lines 1-2).

Both McAllister and Haskin discloses a system of fast alternative-path automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure. McAllister recognizes a storage space to store an initial route from the source device to the destination. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of McAllister to provide a storage space to store an initial route, alternative routes from the source device to the destination in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does

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not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejection to independent claim 24 should be sustained.

For the same reasons, it is believed that the rejection of claim 3 under 35 U.S.C. 103 (a) based on Haskin et al (6812242), McAllister et al. (6560218), and Goval et al. should be sustained.

**Claim 6:**

The appellant argues (in the page 18, lines 17-21) that Gnauck et al. can disclose or suggest a non-alternative-route-enable that include a mechanism to detect failure in a downstream network element that send communication packets to downstream nodes at regular intervals.

However, the examiner respectfully disagrees with the appellant's argument.

As such, Haskin et al. (6813242) and Gnauck (H2075H) references do indeed teach the cited limitations when taken in combination, contrary to Appellant's argument. In response to appellant's argument against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on

combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Haskin et al. discloses non-alternative route enable node (see figure 3, non alternative route enable node).

Gnauck et al. (H2075H) discloses a mechanism to detect failure in a downstream network element that send communication packets to downstream nodes at regular intervals (see col. 14, lines 62-65).

In the page 19, lines 18-21, the appellant argues (in the page 19, lines 18-21) that the examiner's purported motivation to combine the cited references is merely conclusory and based on impermissible hindsight. The examiner does not explain why incorporate a mechanism to detect failure packet to downstream nodes at regular interval into the Haskin et al. / McAllister et al. system.

In response to appellant's argument above, both Haskin et al. , McAllister et al, and Gnauck et al. (H2075 H) discloses rerouting of data packets over predetermined primary path upon failed or congestion in the primary path.

In the claim 6, the combined system (Haskin – McAllister) disclose the limitations of claim 1 above.

However, the combined system (Haskin – McAllister) are silent to disclosing the mechanism to detect failure sends communication packets to downstream nodes at regular intervals.

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Gnauck et al. (H2075 H) discloses the mechanism to detect failure sends communication packets to downstream nodes at regular intervals (see col. 14, lines 62-65, Electronics 1370 are adapted to detect a failure in the connection between ONU 1300 and the COT that includes the optical fiber selected by optical switch 1317. For example, the COT could send a predetermined signal to ONU 1300 at regular intervals.)

Both Haskin et al, , McAllister et al. , and Gnuck disclose rerouting the data packets over predetermined primary path upon failed or congestion in the primary path. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – McAllister) with Gnauck to provide the mechanism to detect failure sends communication packets to downstream nodes at regular intervals in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include

knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed the rejections to dependent claim 6 should be sustained.

**Claim 8:**

The appellant argues (in the page 20, lines 21-22) that "Haskin et al. and Hsing et al. do not disclose or suggest at least one alternative route enabled node and at least non-alternative route enable node".

However, the examiner respectfully disagrees with the appellant's argument.

Haskin et al. discloses a network system including of network element including a plurality of nodes (figures 2, 3, switches 1-7) and connecting links, the plurality of nodes including at least one alternative-route-enabled node (switch 1) and at least one non-alternative-route-enabled node (figures 2, 3, switch 3 or 5), wherein the at least one non-alternative-route-enabled node (switch 3 or 5) (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

The appellant argues (in the page 22, lines 11-16, lines 17-18, lines 20-21, page 23, lines 3-4, page 23, lines 19-22, page 24, lines 5-7, lines 9-12, lines 25-26, page 25, lines 13-15) that Haskin et al. does not disclose or suggest determining an initial route,

where the initial route include at least one alternative route enable node and at least one non-alternative route enabled node, the at least one alternative route enabled node and the at least non alternative route enabled node storing an initial route from the source device to the destination device.

However, the examiner respectfully disagrees with appellant's argument.

As such, Haskin et al. (6813242) and Hsing et al. (6167025) references do indeed teach the cited limitations when taken in combination, contrary to Appellant's argement.

In response to appellant's argument against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Haskin et al. discloses a system for forwarding packets from a source device to a destination device in network interconnected elements include nodes (2,3,4,5,6) and links, comprising: determining an initial route, the initial route including at least one alternative route enable node (figure 3, nodes 1, 7) and at least one non-alternative route enable node (figure 3, node 3, 5) ; detecting a failed element; and automatically forward packets on the alternative route without communicating with either the source or the destination (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

Hsing et al. discloses the at least one non alternative route enabled node (figures 12, 3A, 3B, 3C, figure 16) storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and

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generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route (col.14, lines 33-43, The action taken by the switch 200 detecting a fault is a function of whether the switch is located upstream to a fault in which case the switch is an upstream neighboring switch or downstream in which case the switch is a downstream neighboring switch. Upstream neighboring switches are generally responsible for initiating the process of establishing an alternative path to the destination device while downstream neighboring switches are generally responsible for initiating the release of network capacity reserved by switches which are no longer used as part of the path to communicate information between the source and destination devices.).

The appellant argues (in the page 26, lines 13-14) that the Examiner's purported motivated to combine the cited references is merely conclusory and based on impermissible hindsight.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning.

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But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejection of claim 8 under 35 U.S.C 103 based on Haskin et al. (6813242) and Hsing et al. 6167025) should be sustained.

**Claim 9:**

The appellant argues (in the page 27, lines 21-24) that Saleh cannot disclose or suggest determining an initial route that includes determining a short path from the destination device to the source device within the network; refining the path according to administrative constraints; and establishing the path as the initial route.

The examiner respectfully disagrees with the appellant's argument.

Saleh discloses or suggests determining an initial route that includes determining a short path (col. 27, lines 1-30, shortest path first) from the destination device to the source device within the network; refining the path according to administrative constraints (abstract, mini hops, mini cost "bandwidth") ; and establishing the path as the initial route (col. 27, lines 1-30).



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Appellants argues (in page 28, lines 6-7) that one skill in the art at the time of Appellant's invention would not have been motivated to incorporate this alleged teaching of Saleh into the Haskin et al. and Hsing et al.

In response to appellant's argument above, both Haskin et al., Hsing et al, and Saleh (7002917) discloses rerouting of data packets over predetermined primary path upon failed or congestion in the primary path. Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – Hsing) with the teaching of Saleh to determine the initial route further comprises: determining a short path from the destination device to the source device within the network; refining the path according to the administrative constraints; and establishing the path as the initial route in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The appellant argues (in the page 28, lines 22-24) that the Examiner failed explain why determining a short path, refining the path, and establishing the path as the initial route

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would allow for the finding of an alternative route with sufficient quality of service characteristics in the event of a network failure.

In response to appellant's argument above, both Haskin et al., Hsing et al, and Saleh (7002917) discloses rerouting of data packets over predetermined primary path upon failed or congestion in the primary path. Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – Hsing) with the teaching of Saleh to determine the initial route further comprises: determining a short path from the destination device to the source device within the network; refining the path according to the administrative constraints; and establishing the path as the initial route in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

For the above reasons, it is believed the rejection of claim 9 under 35 U.S.C 103 (a) based Haskin et al., Hsing et al., and Saleh should be sustained.

**Claim 10:**

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The appellant argues (in the page 29, lines 19-21) that Saleh does not disclose or suggest that refining a short path comprises rejecting a path exceeding bandwidth allocation and hop limit, as recited in claim 10.

However, the examiner respectfully disagrees with the appellant's argument.

Saleh disclose or suggest that refining a short path (col. 27, lines 1-30 shortest path) comprises rejecting a path exceeding bandwidth allocation and hop limit (col. 27, lines 1-30, col. 28, lines 27-32, lines 39-41, see abstract, mini hops, mini cost "bandwidth").

The appellant argues (in the page 30, lines 3-8) argues that "One skilled in the art at the time of Appellant's invention would not have been motivated to incorporate this alleged teaching of Saleh into the Haskin et al., and Hsing et al. systems, absent impermissible hindsight . The examiner does not explain why one skilled in the at the time of Appellant's invention would have been motivated to incorporate this alleged feature of Saleh into the Haskin et al. and Hsing et al. system".

In response to appellant's argument above.

In the claim 10, Haskin disclose refining the alternate route to exclude the failed element on the initial router (see col. 2, lines 38-40).

However, Haskin is silent to disclosing refining the path comprising rejecting the path exceeding bandwidth allocation and hop limit.

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Saleh discloses wherein refining the path comprising rejecting the path exceeding bandwidth allocation and hop limit (see abstract, mini hops, mini cost "bandwidth") (col. 27, lines 1-30).

Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – McAllister) with the teaching of Saleh to refine the path comprising rejecting the path exceeding bandwidth allocation and hop limit in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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For the above reasons, it is believed that the rejection of claim 10 under 35 U.S.C 103 (a) based on Haskin et al., Hsing et al., and Saleh should be sustained.

**Claim 11:**

The appellant alleged that (In the page 30, lines 19-22 ) "claim 11 recited that the determining the alternative route comprises determining a shortest route from a node preceding the failed element to the destination device within the network; refining the route to exclude the failed element on the initial route; and establishing the alternative route for forwarding packets. Haskin et al, Hsing et al., and Saleh, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

However, the examiner respectively disagrees with the appellant's argument.

Haskin disclose refining the alternate route to exclude the failed element on the initial router (see col. 2, lines 38-40).

However, Haskin is silent to disclosing determining a shortest path from a node preceding the failed element to the destination device within the network.

Saleh discloses determining the alternative route (col. 2, lines 65-67) further comprises determining a shortest path (col. 27, lines 1-30) from a node preceding the failed element to the destination device within the network; establishing the alternative route for forwarding packets (col. 27, lines 1-30).

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Thus, it would have been obvious to one of ordinary skill in the art at time of the invention to modify the combined system (Haskin – McAllister) with the teaching of Saleh to determine a shortest path from a node preceding the failed element to the destination device within the network in order to reroute the packet over the primary path without crankback the message to source device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

The appellant argues (in the page 31, lines 28-30) argues that “Haskin et al. cannot disclose or suggest the determining the alternative route comprises refining a determined shortest route to exclude the failed element on the initial route as recited in claim 11.

However, the examiner respectively disagrees with the appellant’s argument.

As such, Haskin et al. (6813242), Hsing et al. (6167025), and Saleh (7002917) references do indeed teach the cited limitations when taken in combination, contrary to Appellant’s argement. In response to appellant’s argument against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Haskin et al. discloses the determining the alternative route comprises refining a determined route to exclude the failed element on the initial route (col. 2, lines 38-40,

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setting up an alternative label switch path segment between said source ingress (source device).and destination egress end switches of the primary path, separate from the primary path and sharing no link or switching entity of the primary path apart from the ingress and egress end switches).

Saleh discloses determining the alternative route (col. 2, lines 65-67) further comprises determining a shortest path (col. 27, lines 1-30) from a node preceding the failed element to the destination device within the network; establishing the alternative route for forwarding packets (col. 27, lines 1-30).

The Appellant argues (in the page 32, lines 18-19) that the Examiner's purported motivation to combined cited references (Hsing et al., Saleh, and Haskin et al.) if merely conclusory and based on impermissible hindsight.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include

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knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed the rejections to dependent claim 11 under 35 U.S.C 103 (a) based Haskin et al, Hsing et al., and Saleh is proper.

**Claim 14:**

The appellant argues (in the page 44, lines 16-20, page 45, lines 7-11, lines 20-24) that Haskin et al. and Saleh do not disclose or suggest determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic.

However, the examiner respectfully disagrees with the appellant's argument.

Haskin discloses a system for forwarding packets from a source device to a destination device in a network of interconnected element (switches 2,3,4,5) including nodes and links, comprising:

Establishing the path as the initial route, determining an alternative route; forwarding packets on the initial route; detecting a failed element; and automatically forwarding packets on the alternative route without communicating with either the source or the destination route (see col. 2, lines 35-45, col. 3, lines 15-22).



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However, Haskin is silent to disclosing determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic.

Saleh discloses determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints (mini hop, mini costs) and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic (see col. 2, lines 65-67, a method for finding an alternate route with sufficient quality of service characteristics in the event of a network failure that is fast and efficient must be provided to enable such quick restoration) (see col. 27, lines 1-30, table 9A, table 9B, Paths are computed using what is referred to herein as a QoS based shorted path first (QSPF) technique).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of Saleh to provide determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic in order to reroute the packet over the primary path without crankback the message to source

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device. Thus, the new system would have been enable to reduce the probability of packet loss in a network and make the network more reliable.

In the page 46, lines 17-18, Appellant submit that the Examiner's purported motivation to combine the cited references (Haskin – Saleh) is merely conclusory and based on impermissible hindsight.

As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning.

But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper.

See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejection to claim 14 under 35 U.S.C 103 (a) based on Haskin et al. (6813242) and Saleh (7002917) is proper.

**Claim 18:**

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The appellant argues (in the page 47, lines 13-15, lines 22-24) that McAllister et al. and Saleh do not disclose or suggest computing, at select intermediary nodes along the established route, an alternative route leading from the select intermediary node to the destination device of the established route.

However, the examiner respectively disagrees with the appellant's argument.

McAllister et al. discloses Storing, at each of the select intermediary nodes (figure 1, nodes B, A), the alternative route (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12); determining locally that the established route has failed (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12); and automatically forwarding packets on the alternative route (see col. 2, lines 30-34, lines 38-45, col. 3, lines 11-17, lines 20-24, col. 4, lines 6-12).

Saleh discloses computing, at select intermediary nodes along the established route, an alternative route leading from the select intermediary nodes to the destination device of the established route (see col. 2, lines 65-67, a method for finding an alternate route with sufficient quality of service characteristics in the event of a network failure that is fast and efficient must be provided to enable such quick restoration) (see col. 27, lines 1-30, table 9A, table 9B, Paths are computed using what is referred to herein as a QoS based shorted path first (QSPF) technique).

The appellant argues (in the page 49, lines 1-3) that the Examiner's purported motivation to combine the cited references (McAllister – Saleh) is merely conclusory

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and based on impermissible hindsight. As mentioned in the Non Final Office Action dated 02/28/07 such motivation is based on the knowledge generally available to one of ordinary skill in the art at the time of the invention. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The appellant argues (in the page 49, lines 4-6) that McAllister et al. and Saleh do not further disclose or suggest storing, at each of the select intermediary nodes (which computed the alternative route).

However, the examiner respectfully disagrees with the appellant's argument.

McAllister et al. discloses or suggests storing, at each of the select intermediary nodes (which computed the alternative route) (col. 2, lines 30-35, lines 63-67).

For the above reasons, it is believed the rejection to independent claim 18 under 35 U.S.C 103 (a) based on McAllister et al. and Saleh is proper.

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For the same reasons, it is believed that the rejection to dependent claim 21 which depends on claim 18 should be sustained.

**11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections (claims 1-4, 6, 8-12, 14, 18, 21, 24) should be sustained.

Respectfully submitted,

/SA/

Ho Chuong

Conferees:

Orgad Edan (Supervisory Examiner AU 2619)

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